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EXAMINER

HAMILTON, CYNTHIA

ART UNIT

PAPER NUMBER

1752

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/921,589

Applicant(s)

YANG ET AL.

Examiner

Cynthia Hamilton

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2002 and 20 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10-14, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-14, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11 6) ☐ Other: \_\_\_\_\_

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1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 20, 2003 has been entered.
2. The examiner has fully considered the amendment and declaration filed October 24, 2002 as requested.
3. The following is a quotation of the first paragraph of 35 U.S.C. 112:
  - a. The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. The following is a quotation of the second paragraph of 35 U.S.C. 112:
  - b. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 10-14, 17-18 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. With respect to instant claims 10-14 and 17-18, the photosensitive element claims requires the presence of "at least one ablation layer which is ablatable by infrared radiation and opaque to non-infrared actinic radiation, ..., the infrared ablation layer comprising: at least one infrared absorbing material ; and at least one binder that is a polyacetal, polyacrylic, polyimide, polybutylene, polycarbonate, polyester, polyethylene, polyphenylene ether, or polyethylene oxide; wherein the ablation layer is ablatable from the surface of the photopolymerizable layer upon exposure to infrared laser radiation." The original

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specification and claims do not disclose this generic ablation layer drawn to infrared ablation and infrared absorbing material with the exception of showing with Example 3 that polyamide slip containing Uvinul D 50 are not ablatable with a YAG laser which is an infrared laser and that they are with a CO<sub>2</sub> laser at an infrared wavelength of 10.6 um. The CO<sub>2</sub> laser imaged material is also found to be a poor choice because of the poor resolution obtained indicating damage to the photopolymerizable layer. The laser to be used with respect to the originally filed 1993 application "should be such that the laser treatment can ablate the slip film without damage to the photopolymer layer just beneath" as set forth on page 13, lines 9-12, of the instant specification and on page 14 of the 1993 application (as found attached to the Murphy Declaration). The only IR ablatable embodiment given does damage to the photopolymer just beneath and has a polyamide binder which is also outside the scope of the list of binders in the instant claims. Thus, there is no generic disclosure to the instant element because Example 3 describes an element that fails to meet the requirements set forth by the 1993 applicants for their ablatable elements. Thus, the only explicit disclosure to an IR ablatable element is Example 3. There is no generic disclosure to using an infrared ablatable layer with the Markush list of binders. The introduction of claim changes which involve narrowing the claims by introducing elements or limitations such as the introduction of an infrared absorbing material to a binder which are not supported by the as-filed disclosure is a violation of the written description requirement of 35 U.S.C. 112, first paragraph. See, e.g., *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1571, 39 USPQ2d 1895, 1905. Further, there is no disclosure made to a photosensitive element without the presence of a dopant having a high extinction coefficient in the ultraviolet range. The broader "non-infrared actinic radiation" is not fully supported by the original disclosure and claims. The

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ultraviolet range is essential because the entire scope of the 1993 application is directed to ultraviolet photopolymerizable layers. There is no indication anywhere in the 1993 application that the 1993 applicants intended to encompass any system that was not UV sensitive. The instant claims are not so limited and as such are broader than the 1993 disclosure. The examiner notes that the instant claim language to non-infrared includes photopolymerizable systems actively polymerizable in the visible range. The 1993 application makes no comment or disclosure about visibly imageable systems. Finally, the only support for a layer that could be ablated by infrared laser is that in Example 3 specific to a polyamide. The instant binders for the infrared ablatable layer do not have a polyamide listed as a choice. With respect to instant claim 13, there is no support for a photopolymerizable layer with both the materials of claim 12 and the materials of claim 13 present simultaneously. The examiner does note that the 1993 disclosure does not exclude the use of infrared or visible lasers and layers that ablate when using infrared or visible lasers. The examiner believes the 1993 application does support the use of IR lasers that meet the requirements set forth above with respect to not damaging the photopolymerizable layer. She agrees that the attempt to use IR lasers in Example 3 met that the 1993 applicants intended all laser ablatable materials that fit their requirement be part of their invention. The examiner holds that no species of the ablatable IR layers sought by applicants is supported by actual reduction to practice. Example 3 does not do this because polyamide binders are excluded from the instant invention. With respect to the need for a UV absorber in the instant claims, the 1993 disclosure states the advantages of the UV absorber throughout the specification and never discloses not using it. Thus, the entire application is drawn to the advantages of a UV sensitive system in combination to a laser ablatable layer. See Gentry Gallery 134 F.3d at 1473

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at 1480, 45 USPQ 2d 1498 at 1503 (Fed. Cir. 1998) and In re Sus, 306 F2d. 494, 504, 134 USPQ 301, 309 (CCPA 1962). Thus, the instant claims are broader than the written disclosure in this respect and fails to include the essential element of the UV absorber. The 1993 application fails to present a single IR ablatable system that functions as desired. Thus, limits to only IR ablatable systems are not supported.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 10-14, 17-18 are rejected under 35 U.S.C. 102(e) or (a) as being anticipated by Fan (6,238,837 B1) (and EP equivalent EP 0741330 A1) and optionally further evidenced by Toda et al (4,045,231), Heinz et al (4,430,417) and Chen (4,323,636) cited by Fan in col. 4, lines 26-29, to disclose block polymers to be used by Fan. Fan (6,238,837 B1) cited by applicants has a filing date of May 1, 1995 which is before the filing date of the oldest effective filing date of

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the same application, i.e. 08/479,339 filed June 7, 1995. However, the oldest effective filing date is June 25, 1993 drawn to a continuation-in-part of US SN 08/082,689. The examiner has read this oldest application and found the same data supporting an IR ablatable layer in both the current application and the oldest application. It is a series of tests showing that the YAG laser does not ablate the instant layers but the CO2 laser does with specific polyamide layers, but also damages the underlying polymerizable layer. However, the CO2 laser does work. However, the instant claims 10-18 are the only support found for the breadth of scope now claimed by applicants and that date of claim submission is August 3, 2001. Thus, Fan is seen as prior art with respect to these claims wherein support is not found in the applications as filed. Fan anticipates the instant element wherein butadiene-styrene block polymers are listed as one choice of binder in the photopolymerizable layer and triblocks such as those of Heinz et al in col. One and those of Chen in col. 1 inclusive of styrene-isoprene and styrene-butadiene di and tri block elastomers. The examiner notes the element claimed by Fan is limited to the presence of a monomer as well as an elastomeric binder. However, the process of imaging with an infrared ablatable layer comprised of a binder that can be a polyamide or hydroxypropylcellulose is disclosed in the examples. In Fan, see particularly Abstract, col. 2, lines 8-10, 23-28, col. 3, lines 48-65, col. 4, lines 20-31, 55-61, col. 5, lines 65-67, col. 6, lines 1-35, col. 7, lines 55-63, col. 9, lines 10-col. 10, lines 48, col. 12, lines 8-col. 13, lines 40, Examples and claims. Thus, with respect to instant claims 10-14, 17-18, the elements of Fan anticipate the instant elements and are held to inherently absorb infrared radiation at a wavelength of 10.6 um.

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9. The Declaration of Edward T. Murphy under 37 CFR 1.132 filed October 24, 2002 is insufficient to overcome the rejection of claims 1-14, 17-18 based upon 35 USC 112, first paragraph, as set forth in the last Office action because:

- a. The examiner notes that compliance with the written description is a question of fact which must be resolved on a case-by-case basis. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d at 1563, 19 USPQ 2d at 1116 (Fed Cir. 1991).
- b. The examiner views this declaration from a person skilled the art as addressing question of fact and addresses the factual evidence given by Mr. Murphy to support the issues raised. See *In re Alton*, 76 F.3d 1168, 1176, 37 USPQ2d 1578, 1584 (Fed. Cir. 1996).
- c. Mr. Murphy has reviewed claims 1-14 and 17-18 as they now stand in view of the June 1993 patent application (08-082689) specification and claims. No original abstract was part of the papers attached as those reviewed by Mr. Murphy.
- d. Mr. Murphy discloses that he was the General Manager of Printing Plates for North America and employed by W.R. Grace Company in June of 1993 and at that time oversaw the business unit's research activities and that personnel involved in research and development of printing plates reported to him. The examiner notes that the June 1993 patent application was prosecuted by The W. R. Grace and Co.-Conn. Patent Department. Mr. Murphy states since December 2000 he has been President of GES Corporation wherein he is involved with the development, manufacturing and marketing of physical therapy devices. Thus, Mr. Murphy's opinions are considered in view of this connection with the inventors and/or their assignees, past and present.



e. Mr. Murphy's opinion is that with respect to claims 10-14, 17 and 18 and after review of the patent application as it was given to him, "that it described the claimed subject matter, and that its inventors invented (and thus had possession of) this subject matter."

f. Mr. Murphy considers himself "to be a person having skill in the field to which the claimed photosensitive elements pertain, and also to be a person who had skill in this field in 1993."

g. The facts that Mr. Murphy gives to support his opinion are:

*i. The 1993 application does not require that a particular wavelength of laser radiation or range of wavelengths be used for the ablation.*

(1) The examiner agrees with this and considered it a valid interpretation in view of the 1993 application as a whole.

*ii. The 1993 application on page 14, lines 18-20, discloses that the wavelength of the laser used for ablation must be such that the laser treatment ablates the ablatable layer without damaging the photopolymer layer to an extent that it cannot subsequently be used as a printing surface.*

(2) The examiner disagrees with Mr. Murphy's interpretation of page 14, lines 18-20 and hold it to be in error in view of the following:

(a) The examiner holds to be fact what is found in lines 15-20 of page 14 which is :

*"A laser is employed to precisely remove the slip film exposing the photopolymer underneath to subsequent flood exposure and cure. The wavelength and power of the laser should be such that the*

*laser treatment can ablate the slip film without damage to the photopolymer just beneath."*

The laser is chosen such that ablation does not damage the photopolymer just beneath. The requirement is not that as alleged by Mr. Murphy which is the plate still be subsequently usable as a printing surface. This is a much more generous requirement than that of "without damage to the photopolymer just beneath". This addition to the disclosure is opinion as to what is meant by "without damage to the photopolymer just beneath".

(b) As fact the examiner submits the following from page 7, of the 1993 Application, lines 18-22:

*"The inventors have discovered that if a slip film, of the type already in use with flexographic plates, is modified with a strong UV absorber, a laser can be used to engrave the slip film instead of the photopolymer."*

In the paragraph bridging pages 19-20 of the 1993 application, is found that in the trials where complete ablation was achieved with the sealed- CO<sub>2</sub> laser at 10.6  $\mu$ m, i.e. in the IR range, the underlying photopolymer layer surface was highly textured, the plate surface uneven (from Table II) and the resolution was poor for the letters. 1993 applicants state:

*"... it was seen that the basic idea of the laser-imaging printing plate was demonstrated, and that use of the CO<sub>2</sub> laser resulted in thermal ablation with consequent loss of resolution."*

On page 19, lines 3-7, the 1993 application discloses:

*"Two different laser systems were employed for the ablative studies: a sealed CO<sub>2</sub> absorbing at 10.6  $\mu$ m and a YAG at 1.06  $\mu$ m. The YAG laser was found to be essentially ineffective in causing any ablation."*

The facts do not support Mr. Murphy's allegation. The examiner interprets the words of pages 19-20 to mean the sealed- CO<sub>2</sub> laser ablation experiments did not meet the standard of page 14 that the photopolymer just beneath remain "without damage".

iii. ***Mr. Murphy also alleges as one of skill in the art that the 1993 application experiments indicate a preference for IR lasers as well as UV lasers.***

(1) The examiner disagrees. She cites the UV laser experiment of Example 4 page 21, lines 22-26 of 1993 application

*"Unfortunately, since the styrene-isoprene rubber used to make the photopolymer is also very strongly absorbing at this wavelength, some damage to the surface occurred, especially at higher fluences. Where thermal damage occurred, resolution was poor."*

Thus, applicants of 1993 application in the examiner's opinion did not view at the time of filing a loss in resolution a good outcome.

Example 5 of the 1993 application is directed to optimizing the fluences of the UV laser systems. On page 5, the optimized result of Example 5 was described in lines 22-24 as *"no damage to the plate surface"* and achieving *"a very sharp image of the ablated area with good resolution "* after subsequent flood exposure and development.

The results of Example 6, wherein a xenon fluoride excimer laser at 351 nm, i.e. UV laser, was used, applicants found on page 25, lines 4-9, the following:

*"Microscopic examination confirmed that the image quality for all fluences was good, giving sharp profiles. However the edges were rounded due to insufficient doses in those areas. There was no indication of surface thermal damage and the plate surface was smooth and even in all cases."*

Example 7 results using the same laser were as follows on page 25, lines 27-28, *"Once again, the image quality was excellent for all fluences."*

Example 7 was drawn to using a mixture of UV absorbers to improve results of the Example 1 systems. Applicants reported testing only the printing plates of Examples 6 and 7 for print quality. The results were *"The letters printed were sharp and undistorted."* from page 26, lines 4-5.

All of these facts lead the examiner to believe applicants of the 1993 application did not show a preference for IR lasers as alleged by Mr. Murphy.

The examiner also believes the IR laser systems in Example 3 do not as disclosed meet the requirement of page 14 of the 1993 application, i.e. *"The wavelength and power of the laser should be such that the laser treatment can ablate the slip film without damage to the photopolymer just beneath."* The *"without damage to the photopolymer just beneath"* standard is much higher than can the imaged plate be used as a printing plate.

Applicants in Examples 4-8 of the 1993 application show how to achieve their page 14 requirement. They show it with UV lasers. They do not show it with IR lasers. The examiner believes Mr. Murphy's allegation that the IR laser is preferred in view of the 1993 application to be in error.

iv. Mr. Murphy admits the YAG laser of Example 3 was not effective in causing ablation under the particular operating conditions of the 1993 application. The examiner states the 1993 application discloses *"The YAG laser was found to be essentially ineffective in causing any ablation."*

***To overcome this fact of the record, Mr. Murphy states "those skilled in the art would have understood that the absence of ablation resulted from operating the laser at the relatively low power level that was being tested in Example 3, and that this could easily be remedied by operating the laser at a higher power level."*** He offers as evidence to support his position the 1993 disclosure of Table II wherein applicants further experimented with various CO<sub>2</sub> laser intensity levels. The examiner has already addressed the showing of this group of changes yielding a plate that was not yet up to the standard sought by applicants of the 1993 application. Further, Mr. Murphy does not offer any outside evidence other than his statement that workers in the art in 1993 would have recognized that the YAG laser reported as bluntly "essentially noneffective" would ablate the slip layer as designed by applicants of the 1993 application. There is no other evidence given to overcome this direct statement. There is no

art showing the materials would be known to be ablative with the YAG laser in 1993. The examiner does not believe that Mr. Murphy's allegation in view of the blunt statement of the 1993 application is sufficient to overcome the non working example disclosed without further facts to support his statement. Thus, there is one species of IR laser "*essentially ineffective in causing any ablation*" and one wavelength of IR found marginally useful but not up to the standard set on page 14 of the 1993 application and desired by the 1993 applicants. Further, with respect to using a more intense level, the examiner again notes the UV laser experiment of Example 4 page 21, lines 22-26 of 1993 application

*"Unfortunately, since the styrene-isoprene rubber used to make the photopolymer is also very strongly absorbing at this wavelength, some damage to the surface occurred, especially at higher fluences. Where thermal damage occurred, resolution was poor."*

The simple use of higher fluences does not in and of itself give a working system as set forth by the 1993 application. The interaction of photopolymerizable layer and ablation layer with the laser chosen is not so easily addressed in the examiner's opinion in view of the facts of what the 1993 application set forth.

v. ***Mr. Murphy alleges the 1993 application does not require that a particular binder must be present in the layer of the photosensitive element that is ablatable by laser radiation.*** He then lists those given and references preferred binders from pages 11-12. He states "The disclosure provided in the 1993 patent

application indicates to me that any of the listed binder can be used in the ablation layer."

(1) The issue here is which "ablation layer" is the list of binders for. The examiner agrees that the binders are not limited as long as the systems meet the requirements of the 1993 application on page 14 as set forth above. The only examples of use of IR lasers do not meet these requirements. Thus, the choice of binders is dependent upon: "A laser is employed to precisely remove the slip film exposing the photopolymer underneath to subsequent flood exposure and cure. The wavelength and power of the laser should be such that the laser treatment can ablate the slip film without damage to the photopolymer just beneath." Thus, with respect to the subspecies of IR laser as the ablating laser there is no disclosure to ablatable layers that meet this standard. There is little guidance to workers of ordinary skill in the art in the 1993 application as to what binders would possibly meet this standard with IR lasers. The only guidance is in Example 3 and that is to a system that is imageable but damaged. The slip layer used was a polyamide slip with Uvinul D 50 present. The list of binders given on pages 11-12 of the 1993 application are those which "may be modified by adding the UV absorber of the present invention". The binders listed for the slip film on page 11 are "the preferred vehicle for the UV absorber". The claims of 1993 application also require the "polymer matrix" to have a dopant having "a high

extinction coefficient in the range of 300-400 nm", i.e. the UV absorber.

Instant claims 10-14 and 17-18 do not require the presence of a UV absorber, thus, the binders listed are not given for the instant "IR absorbing material". The only disclosure to an IR ablatable layer is again that of Example 3. Mr. Murphy does not give any evidence other than his allegation that the binders that must contain the UV absorber to be of use in the instant application would be the same binders that would be of use in IR ablatable layers wherein no such dopant is required.

*vi. Mr. Murphy states a " 'UV absorber' is a material that absorbs the radiation used during the curing process, rendering the ablation layer opaque to such radiation. A material would be considered to be a 'UV absorber' according the 1993 patent application so long as it absorbs UV radiation, whether or not it also happens to absorb IR radiation."*

The examiner disagrees with Mr. Murphy's interpretation at one point. The UV absorber of the 1993 application must be in combination with the photopolymerizable layer be as set forth on the paragraph bridging pages 9-10, absorbent in the UV range will cure the photopolymer layer beneath the slip layer. The entire 1993 specification is directed to the presence of UV absorbers in the slip layer and to UV absorbers that are separate from the binders, i.e. polymer matrices. Thus, the UV absorber must be present sufficiently to block the UV radiation that might be used to image the layer below. The binder must be compatible with this UV absorber. There is no requirement that the UV absorber



be an IR absorber or an IR absorber of sufficient quantity to cause ablation of the slip layer. The examiner does agree the UV absorber could be IR absorbent.

Such is not excluded by the 1993 applicants but it is not required either.

iv. Mr. Murphy does not address the issue of photopolymerizable layers being other than UV polymerizable or whether the UV absorber would be recognized by workers of skill in the art to be necessary or not. There is no evidence given to remove the issue of missing limitations to UV absorbers and UV imageable photopolymerizable layers.

The examiner does not find the Murphy Declaration sufficient to remove the rejection addressed. She accepts that the laser ablatable layers of the 1993 application are not limited to UV ablatable layers, but the broad class of laser ablatable layers are those so limited on page 14 as follows:

"A laser is employed to precisely remove the slip film exposing the photopolymer underneath to subsequent flood exposure and cure. The wavelength and power of the laser should be such that the laser treatment can ablate the slip film without damage to the photopolymer just beneath."

In view of the 1993 application showing that only one of two IR systems chosen worked and that the one that worked didn't work up to the standard set, the examiner maintains her rejection based on the failure of the 1993 application to give sufficient written description to support the sub generic species of IR ablatable layers as found in claims 10-14 and 17-18. This is in its broadest wording "at least one ablation layer which is ablatable by infrared radiation and opaque to non-infrared actinic radiation, wherein the

infrared ablation layer is in direct contact with the at least one photopolymerizable layer ... the infrared ablation layer comprising: at least one infrared absorbing material and at least one binder that is a polyacetal, polyacrylic, polyimide, polybutylene, polycarbonate, polyester, polyethylene, polyphenylene ether or polyethylene oxide wherein the ablation layer is ablatable from the surface of the photopolymerizable layer upon exposure to infrared laser radiation." The examiner notes that there is no UV absorber present, there is the addition of an infrared absorbing material in a generic fashion that is not mentioned in the 1993 specification. There is no guidance to binders to be used with IR absorbers in the 1993 specification. There is no list of IR absorbers either. Only Example 3 is given as guidance in the 1993 application to what is IR ablatable. The Declaration does not address what workers of ordinary skill in the art in 1993 would use or understand to use in view of the Example 3 disclosure or any other art of the time.

The examiner does note that in the sentence bridging pages 10-11 of the 1993 application, "The UV absorber must also exhibit a specific response to excitation by laser at an appropriate wavelength: It must allow the ablation of the slip film. " This is not the same as saying the UV absorber is an IR absorber. The broadest reasonable interpretation is that the UV absorber either help in the ablation at the wavelength chosen or that it is not so detrimental to the layer that ablation is degraded to the point of being unsatisfactory.

Mr. Murphy does not addresses the issue of the missing UV absorber from the instant claims.

2. Applicant's arguments filed October 24, 2002 have been fully considered but they are not persuasive. Applicants allege that the examiner has failed to show the 1993 application does not describe an ablation layer that is both ablatable by infrared radiation and opaque to non-infrared actinic radiation. Applicants have broadened the explicit disclosure of the 1993 application to opaque to non-infrared actinic radiation without stating where such support is found. The 1993 application is directed to opaque to UV radiation only. There is no indication that visible radiation is considered part of the opaque radiation as is encompassed by "non-infrared actinic radiation". The 1993 application does describe a layer that fits the generic statement but the generic statement is not fully supported by the 1993 application. One species is given but this is insufficient to support the genus given. The examiner has already addressed the 1993 application with respect to the Murphy declaration in this Office Action. The examiner holds that the 1993 application does not show a single IR ablatable system that meets their requirements of the 1993 system. The general system wherein the laser is unspecified in the 1993 application is such that as set forth on page 14:

*"A laser is employed to precisely remove the slip film exposing the photopolymer underneath to subsequent flood exposure and cure. The wavelength and power of the laser should be such that the laser treatment can ablate the slip film without damage to the photopolymer just beneath."*

The examiner holds the Example 3 of the 1993 application shows neither IR laser in the system given works with respect to the general requirement of the laser needed to make their invention work. Thus, with respect to IR ablatable layers the only disclosure to this species of laser, i.e. IR lasers, do not function as required for the invention set forth. Applicants in their allegations change the scope of the disclosure of the 1993 application when they label the systems of

Example 3 as Examples of systems within the generic invention set forth in the 1993 application. The examiner has already addressed above the reasons why Example 3 is a showing of what is outside the bounds of what the 1993 applicants sought. The examiner believes all laser ablatable layers that meet the limitation from page 14 of the 1993 application, that is:.

*"A laser is employed to precisely remove the slip film exposing the photopolymer underneath to subsequent flood exposure and cure. The wavelength and power of the laser should be such that the laser treatment can ablate the slip film without damage to the photopolymer just beneath."*

Thus, generically IR lasers are included, however, applicants do not give a single example of an IR laser that meets these requirements as already addressed by the examiner above. Applicants do show an ablatable laser layer in Example 3 with a polyamide binder and a specific UV absorber that does not work to this standard. Thus, Example 3 is not a species of the generic materials wherein a list of binders, etc are given. Applicants allege that those of skill in the art could readily predict the intensity level at which an IR laser should be operated to cause ablation of a given ablatable layer based upon the experiments described in Example 3. The examiner has already addressed why this is not so. Applicants presented no art to support their allegation was true as of 1993. All the systems found to meet the 1993 standards are UV ablatable layers. The unpredictability of the 1993 systems lies in the combination of the UV absorbing laser ablatable layer in combination with the UV photopolymerizable layer beneath. The 1993 application addresses not only the ability of the ablatable layer to be ablated but it addresses the fragility of the layer beneath and how just more laser power is not enough to get a system that does not damage the layer beneath. Applicants do not limit their instant systems to the UV

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polymerizable layer underneath. Example 3 of the 1993 application shows the unpredictability of the art when it shows the IR lasers to not come up to standard for their systems.

All of applicants' arguments have been addressed in reference to the Murphy declaration. Applicants do not address the missing UV absorber of the 1993 application. Applicants do not address the addition of "at least one infrared absorption material" to the generic invention found in the 1993 application. The examiner notes that all of the instant claims are outside the scope of the disclosure of Example 3 of the 1993 application. The examiner does believe that the 1993 application is not limited to UV ablatable layers only, but she believes the facts of record in this application do not support the subspecies of IR laser ablatable layers as set forth in the instant claims because there is not one enabling example of a working IR ablatable system in the 1993 disclosure because there is no showing of an IR ablatable system that does not damage the underlying photopolymerizable layer. Applicants have not submitted sufficient facts to show workers of ordinary skill in the art in 1993 would have found a combination of UV polymerizable layer and IR ablatable layer that did work without hit and miss testing of multiple combinations of layers in the art. Applicants claims are not limited to UV polymerizable layers as required by the 1993 application. Applicants claims are not limited to ablatable layers with UV absorbers that absorb a wavelength of UV in which the UV polymerizable layers are cleanly polymerized which is also another limit set forth by the whole of the 1993 application. Thus, the issue of IR being part of the laser ablatable systems of the 1993 application is not the sole issue of lack of support of the written description. The rejections stand.

3. The examiner states for the record that the 1993 application description does in her opinion give adequate support for an ablatable layer that is sufficiently ablatable upon exposure

to laser to expose the photopolymer underneath to subsequent flood exposure and cure without causing damage to the photopolymer just beneath. Any choice of ablatable layer that would achieve that purpose beyond those shown by the 1993 applicants would still have to have present the UV absorber in sufficient amount to make the underlying layer opaque to UV radiation at the time of flood exposure and the underlying layer would still need to be photosensitive in the UV range. This ablatable layer is not limited to UV ablatable systems. It is generic to lasers at all wavelengths that meet the requirements set forth on page 14 of the 1993 application. There is no disclosure in the 1993 application for an ablatable layer with an infrared ablatable material and a binder as listed in the instant claims. That the UV absorber was functional enough to form a printing plate as in Example 3 is given but this plate does not meet the requirement of the 1993 applicants for their generic invention.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scott Paper Company (GB 1,492,070) and in view of the Murphy Declaration filed October 24, 2002 further in view of Law et al (4,492,750). Scott Paper Company discloses on page 1, lines 66-79 a presensitized planographic printing plate having a layer of material which is sensitive to ultraviolet light, is provided with a coating which is opaque to ultraviolet light and is capable of being removed or rendered transparent to ultraviolet light by non-UV laser radiation. The layer that is sensitive to ultraviolet light is disclosed as any one of the commercially available types of either positive working or negative working plates. The nature of the presensitized printing plate portion of the plate of the Scott invention is not critical for the reason that once the mask is formed in situ and the plate is exposed to ultraviolet light, development proceeds in a conventional manner. The layer of material which is opaque to ultraviolet light and capable of

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being removed or rendered transparent to ultraviolet light by non-UV laser radiation can be a dispersion of metal or carbon particles in an organic binder. The opaque layer must be thick enough to be opaque to ultraviolet while remaining thin enough to be vaporized and removed rapidly with a minimum amount of radiant energy applied by the laser for this purpose. Scott Paper Company discloses this in the paragraph bridging pages 1-2. Scott Paper Company also discloses selection of an appropriate laser for removing the layer of material which is opaque to ultraviolet light is well within the skill of the ordinary worker in the art to which their invention pertains. Means for modulating a laser beam to record information on a substrate is well known also. Scott Paper Company goes on to disclose "In general they can be characterized as scanning mechanisms which cause the beam to traverse the area, delivering energy in a predetermined manner." Scott Paper Company has an example of a photopolymerizable layer wherein carbon black is the UV absorbant and Nitrocellulose is the binder. Carbon black is well known in the art to be an infrared absorber as well. The only working example of Scott Paper Company also like the instant applicants uses a binder not in the list given. Scott Paper Company teaches the instant element of claim 10 with the exception of the binders given in the instant claims and not specifically mentioning using an IR laser for the ablation. The examiner states in view of Mr. Murphy's expert opinion that the disclosure of one IR ablatable layer in the materials of the 1993 application as being sufficient to give support for the instant claims which have no binder in common with the disclosure of the sole IR ablatable material disclosed functional enough to form a working plate, then the disclosure of Scott Paper Company is sufficient to make obvious the use of any binders used in non-UV laser radiation ablatable layers known in the art before the 1993 disclosure as well as any ultraviolet lithographic negative acting presensitised plates known

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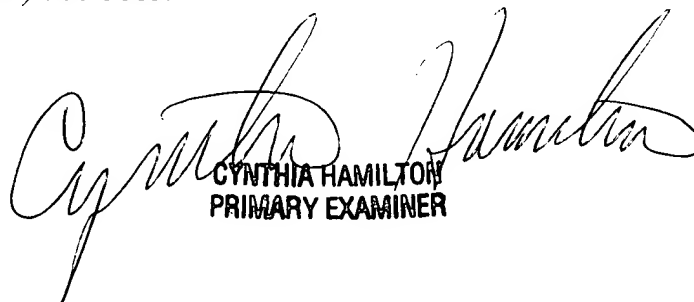
before the 1993 disclosure, because the predictability of the art at the filing of the 1993 disclosure is so predictable to allow such breadth of obviousness. Law et al teach one kind of laser ablatable layers known at the time of the 1993 disclosure. Law et al make use of polymeric binders inclusive of polyesters, polyacrylates, polymethacrylates, and polycarbonates mixed with IR absorbing compounds to make laser ablatable layers. With respect to Scott Paper company and in view of Mr. Murphy's declaration as to the level of skill in the art, the use of known ablatable layers such as those of Law et al as the non-ultraviolet removable layer of Scott Paper would have been the prima facie obvious use of an art recognized available laser removable material as directed by Scott Paper. In Law et al, see particularly the abstract, col. 5, lines 9-25, col. 7, lines 12-23.

5. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cynthia Hamilton whose telephone number is (703) 308-3626. The examiner can normally be reached on Monday-Friday, 9:30 am to 5:00 pm.*

*If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached on (703) 308-2303. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.*

*Any inquiry of papers not received regarding this communication or earlier communications, or of a general nature or relating to the status of this application or proceeding should be directed should be directed to the Customer Service Center of Technology Center 1700 whose telephone number is (703) 306-5665.*

Cynthia Hamilton  
February 23, 2003

  
CYNTHIA HAMILTON  
PRIMARY EXAMINER